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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/865,601	05/29/2001	Yunzhi Gao	GAO 1	4139
1444	7590	06/02/2004	EXAMINER	
BROWDY AND NEIMARK, P.L.L.C.			ALEJANDRO, RAYMOND	
624 NINTH STREET, NW			ART UNIT	
SUITE 300			PAPER NUMBER	
WASHINGTON, DC 20001-5303			1745	

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/865,601

Applicant(s)

GAO ET AL.

Examiner

Raymond Alejandro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,14-16,18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) 14-16,18 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>02/25/04</u> | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION***Response to Amendment***

This office action is in reply to the amendment filed on 02/25/04. The applicants have overcome the 35 USC 112 rejection. However, the claims are now rejected over art as seen below. Thus, the indicated allowability of certain claims is withdrawn in view of the newly discovered reference. It is noted that applicant's submission of an information disclosure statement under 37 CFR 1.97(c) on 02/25/04 prompted the new ground of rejection presented in this office action. Therefore, the claims are finally rejected as follows:

Election/Restrictions

1. Applicant's confirmation of the election of Species I in Paper No. 02/25/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. **Examiner's note:** the office action of 11/25/03 (at page 3, item # 2) stated that since the invention of Species 1: the aluminum layer (claims 2-8) was found to be allowable, for purpose of prosecution, Species 2: the heat resistant polymer layer (including claims 9-17) was also considered and treated on the merits. Thus, the invention of Species 2 was also examined. However, given that the new ground of rejection, at this point, addresses the feature of Species 1 i.e. the aluminum layer, it is recorded that pending claims 14-16 directed to Species 2 are now withdrawn from further consideration by the examiner, as being directed to a non-elected invention. As a result, current claims 14-16 and 18-19 are withdrawn from further consideration.

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3. This application contains claims 14-16 and 18-19 drawn to an invention nonelected without traverse in Paper No. 11/25/03 and 02/25/04. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on 02/25/04 was considered by the examiner.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by the Japanese publication JP 2000-323151 (hereinafter referred to as "*the JP'151 publication*").

The instant application is directed to a bipolar separator wherein the disclosed inventive concept comprises the specific corrosion resistant layer disposed thereon. Other limitations include the specific the conductive film.

As to claim 1:

The JP'151 publication discloses a gas passageway plate (*the bipolar separator*) for a fuel cell in contact with a gas diffusion electrode (SECTION 0004). *Thus, the gas passageway represents the channel for reactant flow.* It is disclosed that a coating layer is formed on the conductive gas passageway plate to form a protective film showing resistance to corrosion

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(SECTION 0006, 0008). The JP'151 publication reveals the conductive gas passageway plate can be made of metallic aluminum (SECTION 0015, 0018 & 0021). EXAMPLE 3 shows a metal conductive gas-passageway plate made of aluminum and having on the plate's surface an anodized layer of aluminum (SECTION 0056).

Examiner's note: *as to the specific preamble reciting a separator "for a fuel cell" and having flow channels and contact faces "that come into contact with an electrode or a collector", it is pointed out that the preamble refers to intended use. That is, the claim is directed to a separator per se and the preamble phrase "for a fuel cell" and "that come into contact with an electrode or a collector" is only a statement of ultimate intended utility.*

Thus, the claim are anticipated.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Japanese publication JP 2000-323151 as applied to claim 1 above, and further in view of the Japanese publication JP 08-171892 (herein called "*the JP '892 publication*").

The JP'151 publication is applied, argued and incorporated herein for the reasons above.

The JP'151 also disclose an anodized aluminum layer having a thickness of 1-30 μm (SECTION 0056).

However, the JP'151 publication does not expressly disclose the specific porosity, the dense and non-dense aluminum layers; the aluminum purity and the specific separator dimension.

The JP'892 publication discloses a electrochemical cell separator having an anodic coating formed by anodizing an aluminum separator (ASBTRACT). The'892 publication disclose an aluminum plate having an anodized aluminum coat formed thereon wherein the porosity in the head area 23 is higher than in the barrier layer area 21 (SECTION 0018) wherein the porosity degree of the anodized aluminum coat is more homogeneous close to the plate surface 17 than to the head area 23. It is also disclosed that porosity and its size is controlled by the electrical potential difference applied to the coated surface at the time of the anodic oxidation (SECTION 0021 & 0036). It is also disclosed that the purity of aluminum is 99.99 (SECTION 0027 & 0041); and an aluminum plate having a dimension of about 0.3 mm (SECTION 0027 & 0041).

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In view of the above, it would have been obvious to one skilled in the art at the time the invention was made to make the separator of the JP'151 publication by having the specific porosity and the dense and non-dense aluminum layers of the JP'892 publication as the JP'892 publication disclose that the pore size and aluminum layer density are easily controlled by the electrical potential applied to the coated surface at the time of the anodic oxidation (anodizing process). Thus, the JP'892 publication directly teaches that it becomes easy to control the pore size as well as the pore distribution. *Furthermore, it is noted that both reference are found to be pertinent to one another as they both address the same problem of providing suitable anodized separator plates.*

As to the aluminum purity and the specific curvature radius, it would have been obvious to one skilled in the art at the time the invention was made to use the specific aluminum purity and the specific separator dimension of the JP'892 publication to make the separator of the JP'151 publication because the JP'892 teaches that aluminum plate having the specified purity and thickness dimension are suitable for carrying out the anodizing process of forming an anodized aluminum layer thereon. Accordingly, the anodized aluminum coating layer formed on the surface of the separator plate enhances corrosion resistance.

Allowable Subject Matter

6. The indicated allowability of claims 1, 3-8 and 14-16 (that is, former claims 2-8 and 14-16 if rewritten in independent form including all of the limitations of the base claim and any intervening as set forth in the office action of 11/25/03) is withdrawn in view of the newly submitted reference. Rejections based on the newly cited reference has been presented above.

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5. **Examiner's note:** the office action of 11/25/03 (at page 3, item # 2) stated that since the invention of Species 1: the aluminum layer (claims 2-8) was found to be allowable, for purpose of prosecution, Species 2: the heat resistant polymer layer (including claims 9-17) was also considered and treated on the merits. Thus, the invention of Species 2 was also examined. However, given that the new ground of rejection, at this point, addresses the feature of Species 1 i.e. the aluminum layer, it is recorded that pending claims 14-16 directed to Species 2 are now withdrawn from further consideration by the examiner, as being directed to a non-elected invention. As a result, current claims 14-16 and 18-19 are withdrawn from further consideration.

Response to Arguments

6. Applicant's arguments with respect to claims 1, 3-8 and 14-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 02/25/04 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond Alejandro
Examiner
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A handwritten signature in black ink, appearing to read 'RAYM', with a large, stylized flourish underneath.